AMENDMENT TO THE CLAIMS

Please amend the claims to read as follows:

1–3. (Cancelled)

4. (Currently amended) A method of stabilizing the wall of an earthen excavation, said method comprising:

placing in said earthen excavation a digging fluid, said digging fluid comprising a polymer, 0.1% to about 50.0% by weight of sodium silicate, and an alkalinity source, said alkalinity source being present from 0.01% to 10.0% by weight of the excavation fluid, said composition being formulated so as to enable the fluid in contact with unstable or sandy soils in the selected areas of the excavation to react and form silicate-based derivatives with lesser solubility, and movement and thus improve soil stability at the excavation wall.

5. (Cancelled)

6. (Previously presented) The method of claim 4, wherein said polymer comprises one or more monomers selected from:

a. acrylamide, methacrylamide, acrylic acid, methacrylic acid, maleic acid, fumaric acid;

b. maleic anhydride, methacrylic anhydride, itaconic acid, acrylic acid dimer(BCEA), M-isopropenylbenzyl dimethyl isocyanate and the nonionic associative monomer derivatives, esters or urethane, so produced containing nonionic surfactant starting materials prepared from ethylene oxide and/or, propylene oxide and/or, butylene oxide and/or C_1 to C_{20} alkyl alcohols and/or C_8 to C_{12} alkyl phenols;

c. itaconic acid, vinylsulfonic acid, styrene sulfonic acid, 2-acrylamido-2-methylpropane sulfonic acid, methallylsulfonic acid, vinyl acetic acid, 4-methylpentenoic acid, allylacelic acid, B-hydroxyethylacrylate, x-haloacrylic acid;

d. M- isopropenylbenzyl dimethyl isocyanate and its nonionic derivatives prepared from alkyl alcohols;

e. methylenebisacrylamide, N-methylol acrylamide, triallyl cyanurate, vinyl crotonate, divinylbenzene, allyl methacrylate;

f acrylic acid esters of sucrose, hexallyl sucrose, trimethytolpropane triacrylate, ethylene glycol diacrylate, diethylene glycol diacrylate, ethylene glycol dimethacrylate, and the like;

g. methacrylic anhydride esters or maleic anhydride esters of sucrose, sorbitol, sorbitol esters with fatty acids;

h. guar gum, starch, ethylated starch, oxidized starch, starch fatty acid esters, dodecylsuccinic anhydride modified starch, agar gum, xanthan gum, arabic gum or galacto-mannin derivatives prepared from methacrylic anhydride or maleic anhydride or M-isopropenylbenzyl dimethyl isocyanate resulting in hybrid monomers;

i. vinyl acetate, N-vinyl formamide, N-vinyl acetamide, N-vinyl pyrolidone, styrene, butadiene, isoprene, chloro-butadiene, vinyl chloride, vinylidene chloride, C_1 to C_{20} acrylate and methacrylate esters;

j. methacryloxyethyl dimethylamine, methacrylamido propyl dimethylamine, dimethyl diallyl ammonium chloride, diethyl diallyl ammonium chloride, and their methyl sulfate and methyl chloride derivatives and water soluble or dispersible salts and combinations thereof.

7. (Previously presented) The method of claim 4, wherein said digging fluid comprises:

a. a synthetic polymer,

b. sodium silicate being 0.1% to 50.0% of the fluid composition; and

c. sodium hydroxide being 0.01% to 10.0% of the fluid composition.

8. (Previously Presented) A process of improving dimensional stability of boreholes, trenches or other excavations, comprising the step of adding sodium silicate, potassium silicate or other soluble silicate into a slurry of water, soils, sands and a synthetic polymer water based

fluid during excavation and enlargement, said slurry further comprising about 0.01% to about 10.0% by weight of an alkalinity source.

9. (Previously Presented) The process of claim 8 wherein the synthetic polymer fluid has a pH between 4 and 13.

10. (Previously Presented) The process of claim 8, wherein the mixed fluid in the borehole, trench or other excavation has a density between about 1.01 and about 1.20 g/cc after the silicate has reacted with the slurry system in the excavation.

11. (Previously Presented) The process of claim 8, wherein the silicates are at a mole ratio of SiO_2 to M_2O of 1:1 to 4:1, respectively wherein M is an alkali metal.

12. (Previously Presented) The process of claim 8, wherein the polymer fluid is a synthetic polymer or polymers based fluid containing at least one polymer prepared from one or more monomers selected from the group consisting of:

(a) acrylamide, methacrylamide, acrylic acid, methacrylic acid, maleic acid, fumaric acid;

(b) maleic anhydride, methacrylic anhydride, itaconic acid, acrylic acid dimer(BCEA), *m*-isopropylbenzyl dimethyl isocyanate and the nonionic associative monomer derivatives, esters or urethane, so produced containing nonionic surfactant starting materials prepared from ethylene oxide and/or, propylene oxide and/or, butylene oxide and/or C_1 to C_{20} alkyl alcohols and/or C_8 to C_{12} alkyl phenols;

(c) vinylsulfonic acid, styrene sulfonic acid, 2-acrylamido-2-methylpropane sulfonic acid, methallylsulfonic acid, vinyl acetic acid, 4-methylpentenoic acid, allylacetic acid, B-hydroxyethylacrylate, x-haloacrylic acid;

(d) *m*-isopropylbenzyl dimethyl isocyanate and its nonionic derivatives prepared from alkyl alcohols;

(e) methylenebisacrylamide, N-methylol acrylamide, triallyl cyanurate, vinyl crotonate, divinylbenzene, allyl methacrylate;

(f) acrylic acid esters of sucrose, hexallyl sucrose, trimethylolpropane triacrylate, ethylene glycol diacrylate, diethylene glycol diacrylate, and ethylene glycol dimethacrylate;

(g) methacrylic anhydride esters or maleic anhydride esters of sucrose, sorbitol, sorbitol esters with fatty acids;

(h) guar gum, starch, ethylated starch, oxidized starch, starch fatty acid esters, dodecylsuccinic anhydride modified starch, agar gum, xanthan gum, arabic gum or galacto-mannin derivatives prepared from methacrylic anhydride or maleic anhydride or *m*-isopropylbenzyl dimethyl isocyanate resulting in hybrid monomers;

(i) vinyl acetate, N-vinyl formamide, N-vinyl acetamide, N-vinyl pyrolidone, styrene, butadiene, isoprene, chloro-butadiene, vinyl chloride, vinylidene chloride, C_1 to C_{20} acrylate and methacrylate esters;

(j) methacryloxyethyl dimethylamine, methacrylamido propyl dimethylamine, dimethyl diallyl ammonium chloride, diethyl diallyl ammonium chloride, and their methyl sulfate and methyl chloride derivatives and water soluble or dispersible salts and combinations thereof.

13. (Previously Presented) The process of claim 8, wherein the silicate salts react with the synthetic polymer fluid, soils, sands and other materials in the excavation cavity to form tackified masses which assist in the creation of a superior fluid loss barrier at the formation interface.

14. (Previously Presented) The process of claim 8, wherein the included silicate salts assist in the dispersion and carrying of colloids within the polymer slurry thereby assisting in increasing the specific gravity of the slurry and providing increased solids dispersion throughout the active synthetic polymer slurry.

15. (Cancelled)

16. (Previously Presented) An anhydrous acid solidification mixture comprising:

a. a structural material, said structural material being used to provide stability, strength, support, foundation, or volume to the solidification mixture and being selected from:

sands, soils, clays, pebbles, cobbles, marble, granite, stones, gravel, rocks, bentonite, cement, polymer fibers, sandstone and combinations thereof,

b. a polymer component;

c. an accelerator compound, said accelerator compound being selected from chemicals capable of producing carbon dioxide in acidic environments, chemicals capable of producing chlorine gas in acidic conditions, inorganic chloride salts, inorganic sulfate and inorganic sulfite salts;

d. an acidic component, said acidic component being selected from solid chemicals between the pH of 4 and 13; and

e. a silicate component, said silicate component being selected from sodium orthosilicate, sodium sesquisilicate, sodium metasilicate, sodium disilicate and combinations thereof.

17. (Previously Presented) The anhydrous acid solidification mixture of claim 16 wherein said accelerator compound is selected from the group consisting of potassium and sodium salts of hydrogen carbonate, potassium and sodium salts of carbonate, sodium and potassium hypochlorite, and combinations thereof, and wherein said acidic component is selected from the group consisting of citric acid, the salts of citric acid, sulamic acid, and combinations thereof.